

Edgewater Ford Assembly Plant,  
Boiler House, Oil House, Water  
Tower and Tank Pond  
309 River Road  
Edgewater  
Bergen County  
New Jersey

HAER No. NJ-53

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PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

HISTORIC AMERICAN ENGINEERING RECORD  
MID-ATLANTIC REGION NATIONAL PARK SERVICE  
DEPARTMENT OF THE INTERIOR  
PHILADELPHIA, PENNSYLVANIA 19106

HISTORIC AMERICAN ENGINEERING RECORD

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Edgewater Ford Assembly Plant,  
Boiler House, Oil House, Water Tower and Tank Pond

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Location: 309 River Road  
Edgewater, Bergen County, New Jersey

UTM: 7.5 minute scale  
Quad: Central Park, N.Y.-N.J.

Dates of Construction: 1929-1931

Present Owner: Edgewater Associates  
1200 Union Turnpike  
New Hyde Park, New York

Present Use: Privately owned, unoccupied building complex

Significance: This complex is an excellent example of Albert Kahn's achievement in industrial architecture, standing midway between the early multi-story plants built in Detroit for Ford and Dodge, and the late 1930's - early 1940's broad assembly plants at Willow Run, Michigan, and Baltimore, Maryland, for Ford and Glenn L. Martin. This plant is a landmark in the industrial development of the west bank of the Hudson River and represents a change in the production policies of the Ford Motor Company from industrial concentration in Detroit to decentralization on the East Coast.

Project Information: Demolition of the Oil House, Oil Tanks, and Water Tower of the Edgewater Ford Assembly Plant is being funded by the Department of Housing and Urban Development. Under Section 106 of the National Historic Preservation Act of 1966, mitigative documentation was undertaken by Ulana D. Zakalak and Robert E. Meadows of P.C. Architects for Edgewater Associates in 1983.

Transmitted by: Jean P. Yearby, HAER, 1985

An Overview of the Automobile Industry in New Jersey

Since the late nineteenth century, New Jersey has taken an active role in the development of the automobile manufacturing industry in this country. Oberlin Smith, of the Ferracute Machine Company in Bridgeton, can be credited with building a "horseless carriage" as early as 1868.<sup>1</sup> Unfortunately, the steam driven carriage ran wild after the control level jolted loose on the Main Street of Bridgeton in the trial run. Smith built a second machine in 1874 and powered it with a marine steam engine. It, too, failed, crashing into the local pond.

J. F. and T. E. Connelly of Elizabeth built a gasoline motor in 1889 to run a street car, but they never tried to install it in a buggy. The Duryea brothers of Springfield, Massachusetts, deserved credit for that achievement when they organized the first automobile company in America in 1895. In 1899, the Riker Electric Vehicle Company was founded in Elizabeth to manufacture electrically powered cars.

Thomas A. Edison of New Jersey was interested in the notion of "horseless carriages" powered by electricity, and he invented a storage battery capable of running a buggy 100 miles. His success appealed to Studebaker Brothers Manufacturing Company of South Bend who wrote Edison in 1902 with the notion of collaborating on an electrically driven vehicle. This collaboration does not seem to have worked because, in 1904, the brothers came out with a new line of two cylinder gas-powered buggies. Back in New Jersey, Edison started the Lansden Company in Newark to manufacture electric trucks and wagons. Because it used only Edison batteries, the manufacturing plant would stop production at frequent intervals whenever the supply ran short at the West Orange battery plant. By the end of 1911, when Edison sold the company, Lansden had made 1,750 electric trucks.

Edison recognized the limitations of his electric battery, and when he first met despairing young Detroit automobile manufacturer Henry Ford, Edison urged Ford, who had just founded his Detroit company, to keep on with his four cylinder automobile. Ford wrote later: "No man up to that time had ever given me any encouragement."

Automobile manufacturers came and went, often leaving no more than a trace in an industrial directory. It has been estimated that fifty different makes of automobiles were manufactured in New Jersey alone during the first half of the twentieth century. Some pioneering firms which collapsed before the onset of World War I include Canda Manufacturing Company of Carteret, a railroad car firm which began manufacturing automobiles in 1901; Prescott Auto Manufacturing Company of Passaic, 1906; Standard Motor Construction Company of Bayonne, 1906; Rockaway Automobile Company, 1906; Walter Automobile Company, Trenton; Vandewater and Company, Elizabeth; Torbensen Motor Car Company, Bloomfield; and Gadabout Motor Corporation of Newark.

Three automobile manufacturers managed to stay in business until after World War I. All three produced hand-tooled cars at great expense. These include the Crane Motor Company of Bayonne, organized 1912; the Simplex Manufacturing Company, New Brunswick, 1907; and the Mercer Automobile Company of Trenton, the most famous of the three, which lasted until 1925. The Mercer Automobile Company was backed by the money of the wealthy Roebling and Kuser families of Trenton, and their cars went into only the best garages.

During this time, there were many subsidiary producers of automobile products and parts, as well. Many of the parts, such as seats, lamps, horns, bodies, etc., were purchased locally. Nevertheless, New Jersey and all the other states were secondary in importance to Michigan's role in the automobile industry.

In 1908, General Motors incorporated in New Jersey because of the new lax corporate tax laws affecting the west side of the Hudson River. In 1923, Alfred P. Sloan, Jr. became president of General Motors and took over the company from the original founder, W. C. Durant. Durant lost control of the firm over an unfortunate and inaccurate business error concerning an electric lamp patent which had no validity in the courts.

Durant was undaunted, however, and decided to found his own company, Durant Motors, Incorporated, in 1921. He managed to purchase at public auction the defunct Duesenberg-built assembly plant in Elizabeth to house his new automobile company. The plant had been built by Fred Duesenberg of Duesenberg Motors Corporation in 1917-1918, but was soon taken over and expanded by John N. Willys of the Willys-Overland Company. Willys had poured millions of dollars into the plant for the Chrysler Motor Company, a division of Willys, but in the end, lacked enough capital to utilize it. The Elizabeth plant was considered one of the largest and most modern assembly plants in the country.

In October of 1922, Durant announced that his Durant 4 and his new Star automobiles would be made in Elizabeth. The first Star rolled out of the plant in November 1922. By 1927, there were 1,000 workers at the plant. By the end of the decade, Durant was out of business, and the Elizabeth plant was abandoned.

Durant's complete collapse cleared the way for the ultimate role New Jersey was to play in the automobile industry - that of the final assembly of automobile parts made in Michigan and elsewhere. New Jersey had all the necessary components: large open areas of land, deep water frontage and a well-developed railroad system. Leading the way in New Jersey was Henry Ford.

Ford erected five buildings in the Kearny marshes in 1918. Eventually, upwards of 8,000 men worked in the Kearny plant, turning out more than 700 cars daily. Late in 1928, after the Model A replaced the Model T as Ford's prime automobile, Ford sold the Kearny works to the Western Electric Company and moved assembly operations to the new 1,500 foot long assembly plant in Edgewater.

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Until World War II, Ford had no real competition. By 1927, New Jersey had 103 firms engaged in some facet of the automobile industry. Their combined employees totaled 13,400, and their combined output equalled \$154,000,000 annually, most of that concentrated in the Ford installation at Kearny and the Durant plant at Elizabeth. Another noteworthy transportation company in 1927 was International Motor Company, manufacturer of Mack truck motors in Plainfield.

General Motors did not expand until 1925, when it bought the buildings in Bloomfield where the company packed Chevrolets for overseas shipments. In 1937, General Motors built a large assembly plant in Linden to make Buicks, Oldsmobiles and Pontiacs. This was the first B-O-P plant built outside of Michigan. General Motors built another plant in West Trenton in 1938 for the manufacture of automobile hardware and parts.

Ford built a new plant in Metuchen in 1948 to assemble Mercuries and Lincolns and one in Mahwah, completed in 1955 and since abandoned. The Studebaker Corporation plant in North Brunswick was finished in 1951, but only filled defense contracts.

Ford Assembly Plant, Edgewater, New Jersey

The former Ford Motor Company Assembly Plant is located in the southern area of the Borough of Edgewater, Bergen County, New Jersey. Designed in 1929 by Albert Kahn, the preeminent American industrial architect, the plant was commissioned by the Ford Motor Company shortly after the purchase of the land.<sup>2</sup> The property, which contains 38 acres, is bordered by the Hudson River to the east, the site of the former Corn Products Refining Company to the south, River Road to the west, and the tracks of the New York, Susquehanna, and Western Railroad to the west and north.

The former assembly plant includes the following components: the access overpass from River Road; the podium beneath the assembly building; the assembly building; the power substation; the boiler house; the oil house; the water tower; and the tank pond.

When the Ford Motor company purchased the Edgewater site in 1929, they acquired 38 acres of open unimproved land and water. In order to have access to the site across the railroad tracks, Albert Kahn designed an overpass for both motor vehicles and pedestrians connecting River Road to the assembly plant. However, before the plant could be built, the land had to be reinforced with piling systems to support the weight of the modern building. These pilings were capped, forming continuous beams on which concrete columns were built to serve as footings. The continuous slab of the first floor was built upon the top of these columns. The other structures in the complex and the larger section of the main assembly building are built on dry fill.

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The triple pedimented main assembly building is 1500 feet long and 360 feet wide, with the long axis running roughly east-west. Most of the building has two floors, bringing the total area inside the building to approximately 950,000 square feet. The rectangular building is divided by rows of steel columns set twenty-five feet apart. Thus, the building is 60 bays long and 12 bays wide with a sixty degree wide central hall which runs the length of the building. The exterior is punctuated by pavilions, separated by expanses of glass, steel and brick curtain walls.

The power substation is located to the west of the assembly building. Here, the electrical supply for the entire complex was received and routed to other structures. The structure is one-story high and was designed like a miniature pavilion in three dimensions, using cut limestone detailing and the decorative brickwork pattern seen on the other two buildings.

Sited to the north of the assembly building, the boiler house is the easternmost of the row of subsidiary structures. The exterior is identical to the northeast and southeast corner pavilions of the assembly building, but is free-standing and capped by a tall circular smokestack. Kahn's designs indicate an octagonal smokestack as first choice, but include a "radical" design as an alternate. For reasons unknown, the alternate was built. The interior is one large, full-height open space.

When built, the boiler house contained three boilers which occupied the western half of the building. The eastern half contained three air compressors, two heaters, and two water circulating pumps. All of this machinery extended downward into the basement where it connected with an underground tunnel leading to the assembly building. A large exhaust system leading to the smokestack and support system for the smokestack were built over the boilers.

The oil house, located immediately to the west of the boiler house, is a low one-story, rectangular structure with three bay-wide pedimented east and west ends. This building is less significant than the assembly building, boiler house or power substation., and this is evident in Kahn's use of a simplified design vocabulary. Differing from that of the assembly building and the boiler house, the decorative trim on the oil house is cast concrete instead of limestone, and the pediments do not have any decorative pattern in the cream-colored brickwork.

The interesting aspect of this structure involved the machinery inside. The floor plan was laid out with two larger rooms at the east and west ends, flanking a smaller central room. Behind is a loading dock and railroad spur. The west room, oil storage room, contained large storage tanks: two for enamel, four for fuel oil and four for gasoline. The east room, tank room, contained smaller tanks: three for motor oil, four for enamel, two for used enamel, two for axle grease, and one for fuel oil. The fuel oil tanks in both rooms had internal steam coils to make the liquids more fluid. These liquids

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flowed through pipes into the center room, pump room, which contained sixteen paint mixers and a variety of pumps: two for enamel, one each for fuel oil, motor oil, thinner, and axle grease. Various finishes were mixed and then pumped into circulating pipe systems through an underground tunnel into the second floor of the assembly building where the spray painting was done.

As elsewhere in the complex, all the machinery has been removed. The present condition of the structure is poor. The roof is completely deteriorated, and rust has caused most of the steel windows and door lintels to deflect.

The machinery inside this structure was sophisticated for its time. Ford saw to it that only the most modern and advanced assembly equipment was installed in the plant, rendering it significant in terms of the automobile manufacturing industry. However, once the machinery was removed, only the complex as a whole can be viewed as technologically significant. Without its equipment, the oil house is merely a shell of a building.

The water tower is situated between the boiler house and the oil house. It is a standard industrial type: a large steel container raised on four steel legs with a central drain pipe. The water tower was not specifically designed by Albert Kahn, although the required pilings, caps, footings and slab were. The water tower is not architecturally or technologically significant.

The tank pond is located to the west of the oil house. The pond consists of an oval concrete bowl set above ground, inside which two large fuel tanks have been placed. The concrete bowl is designed to contain any spill, overflow, or leak from the fuel tanks. The concrete bowl was designed by Kahn, but not the fuel tanks. Neither is significant. The concrete retaining wall appears to be in good condition, though. Like the water tower, the two tanks are rusting.

The Ford Assembly Plant at Edgewater was considered the most advanced and efficient automobile assembly plant for its time. Built as a replacement for the then out-moded, four-story assembly plant in Kearny, New Jersey, the Edgewater facility was one of the first fully-developed, two-story automobile assembly plants in the United States. Henry Ford took full advantage of the rail line, the deep water frontage, the free lighterage limit zone and proximity to a great labor and consumer market to experiment with the most modern equipment available to efficiently produce a low priced automobile.

The oil house, tank pond and water tower were all necessary components of this great industrial complex. However, once the automobile manufacturing stopped, these structures were no longer functional. With the machinery stripped from the insides, these structures are merely shells, and their technological significance can only be viewed as part of the former assembly plant and not as individual entities.

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#### Footnotes

- 1 John T. Cunningham, Made in New Jersey: The Industrial Story of a State (New Brunswick, N.J.: Rutgers University Press, 1954). 173.
- 2 James C. A. Thompson, Ford Motor Company Edgewater Assembly Plant, A National Register of Historic Places Nomination (Baltimore, MD.: March 1983), 3.

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Albion, Robert Greenhalgh. "Engines, ships and other transportation equipment." In: William Starr Myers, editor. The Story of New Jersey, Volume III. New York: Lewis Historical Publishing Company, Inc., 1945.

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